

## DETAILED ACTION

### *Allowable Subject Matter*

1. **The indicated allowability of claims 24-27 and 34** is withdrawn in view of a new interpretation of 35 USC 112, 6th paragraph. Rejections follow.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 24-27 and 34** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Regarding claim 24**, the "high priority communication section" and a "low priority communication section", in lines 13 and 17, respectively, present functionally claimed elements which are not associated with any known structure in the art, therefore they are claim limitation that invokes 35 USC 112, sixth paragraph. Furthermore, the written description fails to clearly link or associate the disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function.

Applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it clearly links or associates the corresponding structure, material, or acts to the claimed function without introducing any new matter (35 U.S.C. 132(a)); or

(c) State on the record where the corresponding structure, material, or acts are set forth in the written description of the specification that perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP 2181 and 608.01(o).

In greater detail, the issues to be resolved with respect to the "high priority communication section" and a "low priority communication section" of claim 24 are as follows. First, do the terms invoke 112, 6th paragraph? Second, does the specification provide a clearly linked structure material or act for performing the designated functions so as to meet the requirements of 112, 2nd paragraph?

Looking to the invocation of 35 USC 112, 6th paragraph, when a claim does not use the terms "means for" or "steps for" there is a presumption that 112, 6th paragraph was not intended to be invoked. *Phillips v. AWH Corp*, 415 F.3d 1303, 1311, 75 USPQ2d 1321, 24 (Fed. Cir. 2005). This presumption may be overcome by showing that the claim term recites a function without sufficient structure for performing that function, such that the recited claim term amounts to a mere "nonce" or substitute for the phrase "means for". *Massachusetts Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1354, 80 USPQ2d 1225 (Fed. Cir. 2006).

Turning to the "high priority communication section" and a "low priority communication section" of claim 24, the terms high and low priority communications sections have not achieved any art recognized structural meaning and are followed by purely functional language identifying the functions that the respective sections perform. Therefore, the "high priority communication section" and a "low priority communication section" present a mere "nonce" or placeholder for the term "means for" and are held to invoke 35 USC 112, 6th paragraph.

Looking to the issue of if the specification provides and clearly links to the corresponding structure for the specified functions, it can be seen that no specific structure for implementing the high priority communication section or the low priority communication section is not clearly identified or linked to. Instead the functions of the high priority and low priority communication sections are described in the generic or alternative form. The high priority communication section is merely identified in paragraph 0130 as "performing communication in accordance with a protocol dedicated to process control" this provides no specific structure, as it could indicate one of many alternative and not disclosed process control protocols. Likewise the low priority communication section is merely identified as "performing communications in accordance with an open standard protocol". Although the example of TCP/IP is given, it is only listed as one of many possible alternatives. Therefore, claim 24 is rejected under 35 USC 112, 2nd paragraph as failing to particularly point out and distinctly claim the subject matter the applicant regards as the invention.

**Regarding claim 24**, the "first communication function implementing section" presents a functionally claimed element which is not associated with any known structure in the art, therefore the first communication function implementing section" is held to invoke 35 U.S.C. 112, sixth paragraph (See the rejection of the high and low priority communication sections, *supra*, for further details as to the relevant case law and standard for determination of the

invocation of 35 USC 112, 6th paragraph). (It is also noted that the similar "second communication function implementing section is held not to invoke 35 USC 112, 6th paragraph, as structure for carrying out the recited function is provided by the "address storing section" the "transmitting section" and the "receiving section" in lines 24, 26 and 30, respectively). Furthermore, the written description fails to clearly link or associate the disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function. That is, the specification fails to disclose any corresponding structure for implementing the recited functions beyond the recited configuration to implement a communication function in a physical layer of an OSI hierarchical model. (Paragraph 0132).

Applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant is required to clarify the record by either:

(a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or

(b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP 2181 and 608.01(o).

**Regarding claim 24**, the claim elements the "transmitting section", the "receiving section", the "diagnosing message receiving section" and the "data transmitting section" appear to not invoke 35 USC 112, 6th paragraph, as they are directed to art recognized structures, such as transmitters and receivers. (See the rejection of the high and low priority communication sections, supra, for further details as to the relevant case law and standard for determination of the invocation of 112, 6th paragraph). However, it is unclear whether the claim element is a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph, because the "transmitting section", the "receiving section", the "diagnosing message receiving section" and the "data transmitting section", although appearing to recite an art recognized structure, are coupled with functionality that is beyond the functionality typically associated with the recited structures. That is the "transmitting section" is not for transmitting information, but is rather for building the frame to be transmitted, the "receiving section" is not for receiving the information, but rather comparing the destination MAC address with the stored MAC addresses of the high and low priority sections, the "diagnosing message receiving

section" is not for receiving, but rather registering path state information and the "data transmitting section" is not for transmitting data but for selecting if data is to be sent on the main or the sub path. Therefore, claim 24 is rejected under 35 USC 112, 2nd paragraph as failing to particularly point out and distinctly claim the subject matter the applicant regards as the invention, as it is unclear if 35 USC 112, 6th paragraph has or has not been invoked.

If applicant wishes to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant is required to:

(a) Amend the claim to include the phrase "means for" or "step for" in accordance with these guidelines: the phrase "means for" or "step for" must be modified by functional language and the phrase must not be modified by sufficient structure, material, or acts for performing the claimed function; or

(b) Show that the claim limitation is written as a function to be performed and the claim does not recite sufficient structure, material, or acts for performing the claimed function which would preclude application of 35 U.S.C. 112, sixth paragraph. For more information, see MPEP 2181.

**Regarding claims 25**, the claim, in lines 4-5, recites a "selecting section" that performs a series of recited functions. The term "selecting section" does not designate any known structure in the art, and is described in purely functional terms therefore, the claim limitation is held to invoke 35 U.S.C. 112, sixth paragraph. Furthermore, beyond the bare recitation of the claimed functions, actual structure that performs the recited functions of the "selecting section"

cannot be found within the specification. Therefore, the claim is rejected under 35 USC 112, second paragraph as failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention. The Applicant is required to amend the claim or specification or point out the implicit supporting structure in the specification, as discussed with respect to the rejection of the "first communication function implementing section" of claim 24, *supra*.

**Regarding claims 26-27**, the claims depend from claims 25 and 34. Therefore, claims 26 and 27 are rejected as incorporating the rejection of claims 24 and 34 under 35 USC 112, 2nd paragraph, by dependency.

**Regarding claim 34**, the "high priority communication section" and the "low priority communication section" in lines 5 and 7, respectively, present functionally claimed elements which are not associated with any known structure in the art, therefore they are claim limitation that invokes 35 U.S.C. 112, 6th paragraph. (It is also noted that the "path diagnosing section" does not invoke 35 USC 112, 6th paragraph, as its functionality is later defined with respect to the "path state storing section" and the "fixed cycle path diagnosing section". Likewise the "switching section" operates using a switch, which has a well known structural connotation in the art and is held not to invoke 35 USC 112, 6th paragraph). Furthermore, the written description fails to clearly link or associate the disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function and is rejected under 35 USC 112, 2nd paragraph as failing to particularly point out and distinctly claim the subject matter the applicant regards as the invention. For further details see the rejection of the "high priority communication section" and "low priority communication section" in claim 24, *supra*.

**Regarding claim 34**, the claim, in lines 17-20, recites "a fixed cycle path diagnosing section" that performs a series of recited functions. The term "a fixed cycle path diagnosing section" does not designate any known structure in the art, and is described in purely functional terms therefore, the claim limitation is held to invoke 35 U.S.C. 112, sixth paragraph. (It is noted that only the functions of "registering the path state information" and "diagnosing the communication path in a fixed cycle" are held to invoke 35 USC 112, 6th paragraph, as the structure for "broadcasting a path diagnosis packet" using the fixed cycle path diagnosing section is specified later in the claim). Turning to the specification, sufficient structure for "diagnosing the communication path in a fixed cycle" is provided by showing that the cycle is calculated and carried out cyclically regardless of the timing of other communications by broadcasting a packet (Paragraph 0178-0180). However, no detail is provided as to structure for performing the function of registering the path state information. Therefore, the claim is rejected under 25 USC 112, second paragraph as failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention. The Applicant is required to amend the claim or specification or point out the implicit supporting structure in the specification, as discussed with respect to the rejection of the "first communication function implementing section" of claim 24, *supra*.

**Regarding claim 34**, the claim elements the "diagnosing message receiving section" and the "data transmitting section" appear to not invoke 35 USC 112, 6th paragraph, as they are directed to art recognized structures, such as transmitters and receivers. (See the rejection of the high and low priority communication sections, *supra*, for further details as to the relevant case law and standard for determination of the invocation of 112, 6th paragraph). However, it is unclear whether the claim element is a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph, because the "diagnosing message receiving section" and the "data



transmitting section", although appearing to recite an art recognized structure, are coupled with functionality that is beyond the functionality typically associated with the recited structures. That is the "diagnosing message receiving section" is not for receiving, but rather registering path state information and the "data transmitting section" is not for transmitting data but for selecting if data is to be sent on the main or the sub path. Therefore, claim 34 is rejected under 35 USC 112, 2nd paragraph as failing to particularly point out and distinctly claim the subject matter the applicant regards as the invention, as it is unclear if 35 USC 112, 6th paragraph has or has not been invoked. The applicant is required to amend the claim limitation to include means for or show that insufficient structure for performing the recited acts is included in the claims. See the corresponding rejection of the "diagnosing message receiving section" and the "data transmitting section" in claim 24, *supra*.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 24-27 and 34 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER CRUTCHFIELD whose telephone number is (571)270-3989. The examiner can normally be reached on Monday through Friday 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Ryman can be reached on (571) 272-3152. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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